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Botanical Gazette.

Vol. VII. NOVEMBER, 1882. No. 11.

Editorial.—In the October *Naturalist* J. B. Ellis and Dr. Geo. Martin describe 13 new species of fungi, 5 of which belong to the genus *Cercospora* and 4 to *Sphæria*.

A solution of caustic potash brings out clearly to the unaided eye the presence of the concealed chlorophyll in the red beet leaf, thus making it a good class illustration.

One of the best plants in which to observe the presence of starch in the chlorophyll masses is *Spirogyra*. There is no necessity of discharging the chlorophyll but the iodine test can be applied at once bringing out beautifully the rich starch contents.

Miss M. Bockee Flint, of Adrian College, Michigan, has just been observing the capsules of *Hamamelis Virginiana* discharge their seeds. A branch lying upon her table and drying rapidly, the capsules began to discharge and the shining black nutlets were sent upward to the ceiling, a distance of at least twelve feet.

Mr. H. W. Preston, in the November *Naturalist*, gives an account of a botanical excursion to Mt. Mansfield and Smuggler's Notch, Vermont, which is enough to make our collectors turn green with envy. Those of us who cannot visit these interesting places must content ourselves with the very beautiful specimens of Messrs. Pringle and Hosford.

In some of our horticultural journals a plea is being made for the cultivation of the much abused dandelion. Not as a pot herb, for this is already done, but as a brilliant flower, that can be made to show its bright gold when everything else is held in by the winter's chill. Success to our humble friend! and when we have ridden our own lawn of its myriad roots we too may be tempted to cultivate it.

In the *Torrey Bulletin* for October, Mr. E. L. Greene describes some more new western plants, one of them being a new genus of *Compositæ* and named *Holozonia*. This plant has been long known imperfectly and has been placed under both *Hemizonia* and *Lagophylla* under the specific name of *filipes*, but upon obtaining complete specimens Mr. Greene decides that it can belong to neither of these genera and the new one is proposed.

IT IS WITH REGRET that we have to record the death of one of our well known botanists. Mr. Elihu Hall, of Athens, Ill., died on the 24th of September last, at the age of 60 years. Mr. Hall's name is very intimately associated with many of our Rocky Mountain plants, the collection of Hall and Harbour in 1862, being among the richest in new species ever made. He botanized extensively in both Texas and Oregon, and in the second volume of the GAZETTE he published quite an extended list, with notes, of the "Arboreous, Arborescent and Suffruticose Flora of Oregon." The frequent appearance of the specific name *Hallii* among our western plants will ever be a reminder of him and his work, a reminder which he would most appreciate, his name linked with the plants he loved so well.

DR. JOHN A. WARDER, President of the American Forestry Association, has just issued a pamphlet bearing the title "Woody Plants of Ohio." In this work he has been assisted by Davis L. James and Joseph F. James, of the Cincinnati Society of Natural History. Dr. Warder is an old and skillful forester and few men have so intimate a knowledge of the "tricks and ways" of our woody plants. Having been fortunate enough to drink inspiration from Nuttall himself, he has never lost it, and is ever anxious to impart his great practical knowledge to others. He has conceived rightly that there is dense ignorance among farmers as to trees and this pamphlet is ostensibly addressed to this class, for the purpose of instruction, but the numerous notes are of great value also to the scientific botanist.

PROF. G. BRIOSI, of Rome, announces the discovery of a new organ upon the germinating plant. It consists of a collar or ring from which develop the equivalents of long "root-hairs." This "annulus" appears at the junction of the caulicle and root. The discovery was made upon the germinating seeds of *Eucalyptus globulus*. This organ is, of course, by no means of universal occurrence and the author mentions a few species and groups in which it is found in greater or less prominence. Briosi considers the function of this collar of hairs that of ordinary root-hairs; "it is a provision for the absorption of moisture from the soil, which comes into action at a very early period in germination, before the root and its root hairs are produced." An interesting notice of Briosi's paper is given by Dr. Gray in the *Am. Jour. Sci.* for October.

PROF. T. J. BURRILL has for some years been engaged in studying a certain plant disease, known as blight, which he concludes is caused by the presence of living organisms known by that very poorly defined name, *Bacteria*. In the last number of the *Amer. Micr. Journal* he gives a very interesting account of certain vegetable poisons which he attributes to the presence of similar organisms. *Rhus Toxicodendron* was the most carefully observed and in its juices were discovered swarms of active bacteria, which

upon being applied to the skin in some way effected an entrance and soon began multiplying, giving rise to the well known itching and blisters. In the serum from the blisters the white blood corpuscles were found filled with wriggling bacteria. The same were found, though not so carefully studied, in the poisonous fungi. The conclusion is reached that many plants harbor these bacteria, which upon being transferred to man induce disease and hence are called poisonous.

In a history of Floyd County, Iowa, Prof. J. C. Arthur has published an account of the botany of that region. It has the merit of being an unusual method of treating such a subject which is at the same time philosophical. The usual method is to give a bare list of the Phanerogams, and may be the Ferns, entirely neglecting those vast groups of organisms which are below them in rank but are very important. Such a list could not be given in an exhaustive way but the grouping of the leading forms in a scientific way will be a revelation to old fashioned botanists who know of nothing lower than that old "catch-all" called "Fungi." Prof. Arthur explains all these groups in such a simple way that any one can understand them and know where to look for illustrative forms. The grouping is the one given in Bessey's Botany which divides the plant kingdom into seven great groups, viz: 1. *Protophyta* or Sexless Plants, and some of the uninitiated citizens of Floyd County must have been startled by the Professor when they read of some members of this group that "they creep about over the ground, and in dry weather crawl beneath the surface, or under sticks and leaves"; 2. *Zygosporeæ* or Unisexual Plants, under which a simple description of the common *Spirogyra* is given and certain molds; 3. *Oosporeæ* or Egg-spore Plants, illustrated by *Saprolegnia* or the fly-fungus and the potato-fungus; 4. *Carposporeæ* or Mushrooms and their Allies, in which group one can hardly look around without finding abundant means of illustration; 5. *Bryophyta* or Mosses and Liverworts; 6. *Pteridophyta* or Ferns and their Allies; 7. *Phanerogamia* or Seed-bearing Plants. The idea that Phanerogams form the principal part of the vegetable kingdom fades away under such a treatment of the subject and this great division shrinks to its proper dimensions as but one of seven groups. At the same time, while this is science, sentiment will always consider that Phanerogams contain about all the plants worth mentioning.

The black-fruited Cratægi and a new species.—We know within the limits of our flora of two black-fruited *Cratægi*, both from the western half of the continent. Mr. G. W. Letterman has now discovered a third one along Red River. These three species may be distinguished from our ordinary red-fruited ones, to be designated as Sect. *Erythrocarpus*, as Sect. *Melanocarpus*, and may be characterized by their black or black-purple or bluish fruit;